

Applicant: Poetzsch
US Patent Application No.09/776,482
Attorney Docket No. (H) 00PTZ1536USP

In the Claims:

1.(Currently Amended) A contour-cutting machine, which is particularly suited for cutting foam, comprising:

a workpiece table for supporting and moving workpieces in a longitudinal direction, said workpiece table,

having support means for supporting said workpieces defining an upper side of said workpiece table, said workpiece table upper side being bounded in said longitudinal direction by a pair of first and second longitudinal extending, lateral sides, a table gap extending transversely to said longitudinal direction between said pair of lateral sides;

said workpiece table including workpiece- driving conveying means for moving said workpieces on said workpiece table upper side in said longitudinal direction across said table gap;

a stationary frame that encloses said workpiece table in a vicinity of said table gap;

a movable cutting-element carrier defining a quad and having an open side and an opposite side, said cutting-element carrier supporting a plurality of pulleys;

an endless cutting element mounted on said pulleys and passing through said table gap at said open side of said cutting-element carrier;

cutting-element driving means for driving said cutting element in a vertical direction along said open side of said cutting-element carrier through a cutting region for said workpieces;

first means for supporting and guiding said cutting-element carrier near said open side thereof in said transverse direction along said table gap;

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transverse-direction driving means for driving said cutting-element carrier at said open side thereof in said transverse, direction and second support means for supporting and guiding said cutting element carrier near said opposite side thereof along said first lateral side of said workpiece table in said longitudinal direction.

2. (Previously Presented) The contour-cutting machine of claim 1

wherein said first supporting and guiding means comprises a pair of first rails extending respectively above and below said table gap and being fixed onto said stationary frame, and

a pair of first carriages guided by said pair of first rails and being connected to said cutting element carrier at said open side thereof,

said transverse-direction driving means being arranged to drive each of said first carriages with the same speed and to the same extent in said transverse direction of said workpiece-table.

3. (Previously Presented) The contour-cutting machine of claim 1

wherein said second supporting and guiding means comprises an upright having an upper end and a lower end, a pair of second stationary rails being located along said first lateral side of said workpiece table near said upper end and said lower end of said upright, and

a pair of second carriages that are guided by and along said pair of second rails and are connected to said cutting-element carrier at said opposite side thereof for carrying said opposite side of said cutting-element carrier along said first lateral side of the workpiece table.

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4. (Previously Presented) The contour-cutting machine of claim 1

wherein said cutting-element carrier comprises:

four corner members and at least an upper bar and a lower bar,

said plurality of pulleys supported by said cutting-element carrier including two upper pulleys and two lower pulleys, each corner member mounting and journaling one of said pulleys;

said corner members being arranged according to a rectangle including two upper corner members and two lower corner members,

said upper corner members being connected to one another by said upper bar and said lower corner members by said lower bar, each bar defining a predetermined distance between said upper pulleys and between said lower pulleys, respectively.

5. (Currently Amended) The contour-cutting machine of claim 2 3

wherein said cutting-element carrier comprises

a pair of first pivot bearings and a pair of second pivot bearings, said first bearings being connected to said first carriages and said second bearings to said a pair of second carriages that are guided by and along a pair of second rails.

6. (Previously Cancelled)

7. (Previously Cancelled)

8. (Previously Cancelled)

9. (Currently Amended) The contour-cutting machine of claim 5

also comprising a knife-rotating device.

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wherein said pair of first pivot bearings and a said knife-rotating device define an axis at said open side of said cutting-element carrier, wherein said cutting-element comprises a cutting-element band knife having a cutting edge, said cutting edge moving through said cutting region for said workpieces when said cutting-element is driven by said cutting-element means, said axis defined by said knife-rotating device extending through said cutting edge of said cutting element in said cutting region.

10. (Withdrawn from Consideration by Election) and (Currently Amended): The contour-cutting machine of claim 6 claim 1 wherein said movable cutting-element carrier has a pair of corner members at said opposite side, the machine also comprising a grinding apparatus for the band knife mounted on one of said corner members, and a tensioning device for the band knife mounted on said other one of said corner members.

11. (Currently Amended). The contour-cutting machine of claim 3 2 wherein said cutting-element carrier comprises a pair of first pivot bearings and a pair of second pivot bearings, a pair of second carriages that are guided by and along said pair of second rails and are connected to said cutting-element carrier at said opposite side thereof for carrying said opposite side of said cutting-element carrier along said first lateral side of the workpiece table.

said first bearings pivot being connected to said first carriages and said second bearings to said second carriages.

12. (New) The contour-cutting machine of claim 9

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wherein said knife-rotating device comprises an upper member and a lower member where said cutting region is between, said band knife with its cutting edge defining a cutting plane for said workpieces in said cutting region, said upper and lower member of said knife-rotating device being rotatable so as to adjust said cutting plane of said band knife relative to said longitudinal direction (of moving workpieces).

13. (New) The contour-cutting machine of claim 1

wherein the cutting element is a band knife, the machine also comprising a knife-rotating device for adjusting said band knife in a desired plane of movement through the table gap, said knife-rotating device being supported by said stationary frame.

14. (New) The contour-cutting machine of claim 11 also comprising

a top knife-rotating head which is a part of said knife-rotating device, and third means for supporting and guiding said top knife-rotating head in transverse direction (Y), said third supporting and guiding means being arranged between, and extending parallel to said first and second supporting and guiding means and being vertically adjustable in distance to said upper side of said workpiece table.

15. (New) The contour-cutting machine of claim 11

wherein said moveable cutting-element carrier has a pair of corner members at said opposite side, the machine also comprising

a grinding apparatus for the band knife mounted on one of said corner members, and

a tensioning device for the band knife mounted on the other one of said corner members.